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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,344	05/07/2001	Hiroshi Yokoyama	PW 0277195 TK(F)-060-US	1120

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MCLEAN, VA 22102

EXAMINER
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FONTAINE, MONICA A

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 11/29/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/849,344

Applicant(s)

YOKOYAMA ET AL.

Examiner

Monica A Fontaine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Siegrist et al. (U.S. Patent 5,792,483). Regarding Claim 1, Siegrist et al., hereafter "Siegrist," show the process as claimed, including an injection control method for a die-casting machine (Column 5, lines 65-66; Column 12, line 65), including the steps of setting target velocity data specifying injection operation required for the injection cylinder unit in advance (Column 8, lines 1-6; Column 15, lines 5-9), performing the injection operation actually, and recording command data given to the injection cylinder unit and detected velocity data indicating the operation performed by the injection cylinder unit during the injection operation (Column 15, lines 63-65), calculating a correction value from a difference between the detected velocity data and the target velocity data, correcting the command data for the previous injection operation by the correction value, and generating the command data for the next injection operation (Column 9, lines 12-18;

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Column 11, lines 14-18), and operating the injection cylinder unit by giving the generated command data at the time of the next injection operation (Column 8, lines 63-67 – Column 9, lines 1-2). Regarding Claim 5, Siegrist shows the process as claimed, including setting, in advance, a pattern in terms of position and velocity for specifying the injection operation that is to be used for injection position feedback control, as well as the pattern being converted into target velocity data (Column 15, lines 5-9, 15-18).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siegrist et al. (U.S. Patent 5,792,483) in view of Rosato's Injection Molding Handbook (3<sup>rd</sup> edition, 2000). Regarding Claim 2, Siegrist et al., hereafter "Siegrist," show the process as claimed as discussed above, including obtaining the correction value by operating the injection cylinder unit a predetermined number of times by the ordinary injection position feedback control (Column 8, lines 9-17, 21-25), and shifting the control maintenance by command data generated from the correction value and the previous command data to various other control mechanisms (Column 8, lines 25-38). Rosato shows that open loop control is used to maintain a setpoint (Page 623, column 2, paragraph 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's open loop control to maintain a process parameter at a

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level which takes into account the correction value in Siegrist's injection molding process in order to promote the most effective control of the process. Regarding Claim 3, Siegrist shows the process as claimed as discussed above, including identifying a value of servo delay in the injection cylinder unit (Column 6, lines 49-54; Column 7, lines 12-14). Rosato shows that it is known to use process control strategies to compensate for disturbances to the system (Page 626, column 1, paragraph 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's accommodation of the value of the said servo delay in the calculation of the correction value in order to obtain the most accurate correction value for the process as possible, to therefore obtain the most efficient control of the process. Regarding Claim 4, Siegrist shows the process as claimed as discussed above, including setting values for acceleration and deceleration in a process (Column 16, lines 36-40), and identifying a value of servo delay in the injection cylinder unit (Column 6, lines 49-54; Column 7, lines 12-14).

Rosato shows that it is known to adapt control strategies to variations in molding cycles (Page 673, column 2, paragraph 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the servo delay per each section of the injection operation having a different velocity profile, using Rosato's control theory, in order to obtain the most accurate control mechanism for the Siegrist's injection molding process.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent is cited to further show the state of the art with regard to injection control mechanisms in general:

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U.S. Patent 5,316,707 to Stanciu et al.

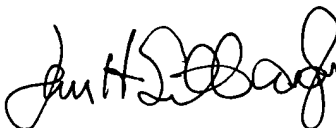
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 703-305-7239.

The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan Silbaugh can be reached on 703-308-3829. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

maf  
November 25, 2002

  
JAN H. SILBAUGH  
SUPERVISORY PATENT EXAMINER  
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11/25/02